

CLAIMS

Please amend claims 1, 3, 14, 15 and 20 and cancel claims 2, 18-19, 21 and 24 without prejudice or disclaimer:

1. (Currently Amended) A method for recovering data transmitted on a physical channel, wherein a channelization code used for the physical channel is not known at the time of the data recovery, the method comprising:

receiving and processing a modulated signal to provide received samples;
selecting a hypothesized channelization code for processing the physical channel;
processing the received samples with the hypothesized channelization code to generate partially processed symbols;
storing intermediate results representative of the partially processed symbols;
determining an actual channelization code used for the physical channel; [[and]]
processing the intermediate results in accordance with the actual channelization code and the hypothesized channelization code to provide final results; and
selectively combining the final results from multiple symbol periods to obtain a recovered symbol, wherein each symbol period corresponds to duration of the actual channelization code.

2. (Canceled)

3. (Currently Amended) The method of claim [[2]] 1, wherein the selectively combining is performed in a manner complementary to an encoding performed in accordance with a space time block coding transmit antenna diversity (STTD) mode ~~defined by W-CDMA standard.~~

4. (Original) The method of claim 1, wherein the processing the received samples includes

discovering the received samples with the hypothesized channelization code to generate discovered symbols, and

demodulating the discovered symbols with pilot estimates to generate the partially processed symbols.

5. (Original) The method of claim 4, wherein the demodulating with the pilot estimates includes

performing a dot product between the discovered symbols and the pilot estimates, and

performing a cross product between the discovered symbols and the pilot estimates, and

wherein the partially processed symbols are derived based on results of the dot and cross products.

6. (Original) The method of claim 1, further comprising:

combining partially processed symbols from a plurality of demodulation elements assigned to process the physical channel to generate the intermediate results.

7. (Original) The method of claim 1, wherein the processing the intermediate results includes

partitioning the intermediate results into sets of intermediate results,

scaling each intermediate result in a particular set with a respective scaling factor determined by the actual channelization code and the hypothesized channelization code, and

combining the scaled results for each set to obtain a final result for the set.

8. (Original) The method of claim 7, wherein the scaling factor is either +1 or -1.

9. (Original) The method of claim 1, wherein the hypothesized channelization code is a member of a set of channelization codes that may be used to generate the actual channelization code, and wherein the hypothesized channelization code has a length that is shorter or equal to that of the actual channelization code.

10. (Original) The method of claim 9, wherein the hypothesized channelization code can be used to generate all channelization codes in the set.

11. (Original) The method of claim 9, wherein the hypothesized channelization code is an orthogonal variable spreading factor (OVSF) code.

12. (Original) The method of claim 11, wherein the hypothesized OVSF code has a largest spreading factor among the channelization codes in the set.

13. (Original) The method of claim 11, wherein the hypothesized OVSF code has a spreading factor of four or greater.

14. (Currently Amended) The method of claim 11, wherein the hypothesized OVSF code and [the] an actual OVSF code each has a spreading factor ranging from four to 512.

15. (Currently Amended) The method of claim 4, wherein the pilot estimates are generated by

despreading the received samples with a pilot despreading code, and
integrating the despread pilot samples over a length of the pilot despreading code to obtain [the] pilot symbols that are then used to generate the pilot estimates.

16. (Original) The method of claim 15, wherein the pilot estimates are generated by interpolating or extrapolating the pilot symbols.

17. (Original) The method of claim 1, wherein the physical channel has a variable data rate.

18. (Canceled)

19. (Canceled)

20. (Currently Amended) A receiver unit operative to process a physical channel in a CDMA communications system, comprising:

a receiver operative to receive a modulated signal and provide received samples indicative of data transmitted on the physical channel;

at least one demodulator element coupled to the receiver, each demodulator element including

a data processing unit operative to receive and process the received samples in accordance with a hypothesized channelization code to provide discovered symbols;

a memory unit operative to store intermediate results representative of the discovered symbols from the at least one demodulator element; and

a processor operative to receive and process the intermediate results in accordance with an actual channelization code and the hypothesized channelization code to generate final results,

wherein each demodulator element further includes:

a pilot processing unit operative to receive and process the received samples to generate pilot estimates, and

a data recovery element coupled to the pilot processing unit and the data processing unit, the data recovery element operative to receive the pilot estimates and the discovered symbols and generate [the] partially processed symbols.

21. (Canceled)

22. (Currently Amended) The receiver unit of claim [[21]] 20, wherein the data recovery element is operative to receive and demodulate the discovered symbols with the pilot estimates to generate the partially processed symbols.

23. (Original) The receiver unit of claim 22, further comprising:

a combiner coupled to the at least one demodulator element and operative to receive and combine partially processed symbols from one or more assigned demodulator elements to generate the intermediate results.

24. (Canceled)